

Customer
Service
Programme-
Europe
(CSP-E)



Customer Service Dealer Activity in Europe

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CUSTOMER SERVICE
DEALER ACTIVITY IN EUROPE

MAY 1987

Research produced by
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Customer Service Programme - Europe (CSP-E)

Customer Service Dealer Activity in Europe

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CUSTOMER SERVICE DEALER ACTIVITY IN EUROPE

ABSTRACT

This report examines the customer services activities of dealers in the major Western European markets of the U.K., France, and West Germany. It covers hardware maintenance and software support as well as other services such as training and consultancy. The report also examines dealer customer support trends as they are expected to develop over the next one to five years, including the dealer/manufacturer relationship.

This report contains 93 pages, including 24 exhibits.

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CUSTOMER SERVICE DEALER ACTIVITY IN EUROPE

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I INTRODUCTION

A. OBJECTIVES AND SCOPE

- This report has been produced as part of INPUT's 1987 Customer Service Programme in Europe, designed to increase the awareness of manufacturer/dealer issues.
- The report provides hardware and software vendors with information about the range of services currently provided by dealers and value-added resellers (VARs). It examines the services on offer today and those likely to become important in the next five years as well as the impact on revenues, profitability, and personnel expertise.
- The report focuses on dealer activity in France, West Germany, and the United Kingdom. In addition to quantitative issues, the attitudes of the manufacturers supplying equipment and packaged software are discussed together with the likely impact of third-party maintenance (TPM) companies.
- Specifically, the research conducted for this report set out to:
 - Identify the range of services currently offered by dealers/VARs and assess the revenue and profitability of these services.

- Forecast the requirement for these services with their revenue percentage one to five years in the future.
- Establish how comprehensively these services are carried out and forecast any changes to the implementation of support over the next one to five years.
- Establish manufacturer attitudes towards the concept of dealer/VAR support services and forecast attitudes over the next one to five years.
- Ascertain any future trends in support services, particularly with respect to the hardware/software balance, training, and 'one-stop' shop and maintain.

B. METHODOLOGY

- Five face-to-face interviews were carried out on-site with leading dealers and value-added resellers (VARs) in the U.K. to identify the range of services offered and to ascertain future trends.
- Forty-three telephone interviews were conducted with a cross-section of third-party companies in the U.K., France, and West Germany.
 - Selection of dealers was made from trade directories and published information from vendors, magazines, and libraries and the profile of these interviews is shown in Exhibit I-1.
- Representative samples were taken from:
 - Leading hardware vendors, as shown in Exhibit I-2.
 - Leading software vendors.

EXHIBIT I-1

PROFILE OF DEALERS INTERVIEWED

NUMBER OF DEALERS INTERVIEWED	FACE TO FACE	TELEPHONE	TOTALS	PERCENT OF TOTAL
United Kingdom	5	18	23	48
West Germany	0	12	12	25
France	0	13	13	27
Total	5	43	48	100

ANALYSIS BY TYPE OF DEALER	UNITED KINGDOM	WEST GERMANY	FRANCE
Maintenance Only	2	-	-
Dealer Leaving Maintenance	1	-	-
Microcomputer Dealers	10	10	6
Minicomputer Dealers	5	2	4
Comments Only	5	-	3
Total	23	12	13

EXHIBIT I-2

LIST OF HARDWARE VENDORS REPRESENTED
FROM INTERVIEWS WITH DEALERS

- AMSTRAD
- APPLE
- APRICOT
- BURROUGHS/UNISYS
- CADO
- COMART
- COMPAQ
- CONVERGENT TECHNOLOGY
- DATA GENERAL
- DIGITAL EQUIPMENT CORPORATION
- ERICSSON
- EPSON
- HEWLETT-PACKARD
- ICL
- IBM
- OLIVETTI
- PHILIPS
- SPERRY/UNISYS
- TANDY
- VICTOR
- WANG

- Dealers selling equipment from small range personal computers to multi-user minicomputers.
 - Dealers spread across the U.K., France, West Germany, and across main cities and distinct geographical areas within those markets.
 - Those dealers not offering service or having recently sold their service or maintenance business.
- Additionally, a random sample of 207 U.K. dealers was undertaken to provide fuller insights into the relationship between size of organisation and the extent to which customer services are provided by those dealers.
 - The remaining chapters of this report are organised as follows:
 - Chapter II is an Executive Overview providing a summary of the contents of the entire report.
 - Chapter III describes the current and projected range of services offered to end users by the dealers.
 - Chapter IV details the ways in which the various support services are implemented by dealers and also examines the levels of spares stock-holdings expected of dealers and their availability from the vendors.
 - Chapter V analyses dealer support activities and trends, highlighting new service opportunities in hardware, software, and associated areas.
 - Chapter VI details the relationships between the dealers and the manufacturers and identifies the potential impact of external services available from third-party maintenance companies.
 - Chapter VII provides conclusions and recommendations for manufacturers concentrating on reaching customers via third-party channels.

II EXECUTIVE OVERVIEW

- This Executive Overview is designed in a presentation format in order to:
 - Help the busy reader quickly review the key research findings.
 - Provide a ready-to-go executive presentation, complete with a script, to facilitate company/group communication.
- The key points of the entire report are summarised in Exhibits II-1 through II-5.
- On the left-hand page facing each exhibit is a script explaining its contents.

A. RANGE OF SERVICES OFFERED

- The range of support services offered includes hardware maintenance, software and support, consultancy, and training.
- U.K. dealers in general offer a much wider range of services than their counterparts in France and West Germany.
- Dealers generally had not given serious thought to increasing or decreasing the range of services to be offered in the future.
- As end-user installations become more complex, dealers will be required to offer advice and implementation on networking, communications, installation planning, and disaster recovery work.
- Work handled for one (or two) key customers often provides the dealer with a new service opportunity which is then offered to other clients.

RANGE OF SERVICES OFFERED

- **Services Available Today**
 - **Hardware and Software Maintenance**
 - **Consultancy**
 - **Training**
 - **Services To Be Provided in Next One to Five Years**
 - **Networking and Communications**
 - **Installation Planning**
 - **Disaster Recovery Work**
-

B. REVENUE AND PROFIT FROM SERVICES

- Revenue from service business ranges from below 5% (or zero, from one or two dealers who have recently abandoned or sold out their maintenance business) to over 35% of total turnover. There were many "don't knows" unable to estimate their service revenue, especially amongst smaller dealers.
- Profit from service business was more difficult to establish, but ranged from 5% to above 40% of total company profitability.
- Share of both revenue and profit from service was expected by all respondents to increase over the next five years, but quantification of that increase was not readily available. In this context, it is felt that, in general, revenue will be proportional to installed product, but profit from maintenance will depend on a number of variables--quality of product, maintainability, mark-up on spares, expertise of engineer, and level of preventive maintenance.
- For the most part, dealers have not thought through their service objectives and assume that both revenues and profit from this sector will grow in line with the rest of their business.
- Dealers, in general, believe that it is easier and less expensive to set up a software support service than to invest in hardware maintenance, but have not really established the levels of expertise demanded by the customer nor the true extent of the service to be offered on both custom and packaged software.
- For some smaller dealers with cash flow problems, the sale of their maintenance service has been the only way to survive.

REVENUE, PROFIT, AND EXPERTISE

- **Revenue (5-35% of Total Revenue)**
 - **Increase Over Next One to Five Years**
 - **Revenue Proportional to Installed Product**
 - **Profit (5-40% of Total Profit)**
 - **Expertise Needed to Increase Revenue**
-

C. DEALER SUPPORT TRENDS

- Dealers believe that new service opportunities exist in networking and communications, laser printers, laptop computers, and insurance.
- Users will increasingly turn to one company to handle all support activities, including maintenance of systems bought from a range of suppliers, e.g., OEMs and third parties.
- Dealers feel they are able to offer a better service than manufacturers because:
 - They are geographically closer to the customer.
 - They can provide a more personalized approach.
 - They know the installation better.
 - They can be more flexible in meeting customer requirements.
- Dealers also believe that software support services are easier and cheaper to set up and maintain than hardware maintenance. As hardware prices continue to decline and customers take on additional software packages, the proportion of software support revenues and profit will increase, and this will be reflected in both revenue and profit (see Exhibit III-2).
- Training and support is always needed on software, whether packaged or custom, but more support will be required on custom software; in either case the software vendor must be prepared to provide training and support to the dealer and/or customer.
- All the dealers surveyed who provided custom software offer a 'hotline' service.

DEALER SUPPORT TRENDS

- **New Hardware Service Opportunities**
 - **'One-Stop' Shopping**
 - **Dealers versus Manufacturers**
 - **Software Support Cost Levels**
 - **Custom Software versus Packaged Software**
 - **Training and Support from Vendors**
-

D. DEALER/MANUFACTURER RELATIONSHIP

- For lower level equipment such as PCs, the relationship between dealers and manufacturers is good.
- For more advanced equipment, there is more likely to be a conflict between the manufacturer and its appointed dealers due to 'snatching' of maintenance contracts.
- Dealers do not appear to expect more from the manufacturer or supplier than they are currently receiving. They need training, technical back-up, documentation, reliable delivery of spares and components, and quick 'fixes'.
- Manufacturer's lead times for some spares were thought to be excessive. This caused some dealers to purchase requirements from alternative sources, which could lead to quality and/or safety problems in the field, and a resultant 'bad press' for the manufacturer.
- In some cases, it is worth noting that the chain of supply to the customer is quite long, with requests going firstly from a TPM to a dealer, then to a distributor, and finally to the manufacturer. While this may not directly be the manufacturer's fault, long lead times do cause intense irritation and result in both the dealer and customer being dissatisfied with the manufacturer.

DEALER/MANUFACTURER RELATIONSHIP

- **Microcomputer and PCs - Good**
 - **More Advanced Equipment - Variable**
 - **Expectations of Dealers Are Being Met**
 - **Lead Times for Spares Can Be a Problem**
 - **Chain of Supply Can Be Long**
-

E. IMPACT OF THIRD-PARTY MAINTENANCE (TPM) COMPANIES

- All dealers are conscious of TPM presence but do not appear to be unduly concerned about their activities in the market.
- Very few dealers regarded TPM as a threat to the development of their service business. As long as TPM provides a good service, they may actually help smaller dealers by offering service for customers in remote geographical areas.
- Providing the dealer satisfies its existing customers, the user is unlikely to desert to either the manufacturer or a TPM.
- One dealer interviewed had sold his maintenance business to a TPM in order to raise finance. The main reasons given were increased expenses for people, training, and spares; enhanced competition; and lower maintenance revenues per unit as hardware prices continue to decline.
- It is the view of INPUT that there is complacency amongst the dealers interviewed about TPM, which in the long term may cause loss of business for dealers and, if the TPM service is not reliable, also a loss of business for the manufacturer.
- In general, manufacturers do not control the activities of TPMs nor give the same level of support and training as they do for their dealers, and they must consider the effect of possible substandard service on the credibility of the product itself.

IMPACT OF THIRD-PARTY MAINTENANCE (TPM) COMPANIES

- **Dealers Complacent**
 - **Users Are Loyal if Dealer Services Well**
 - **Some Sale to TPM**
 - **No Control of TPMs by Manufacturers**
 - **Quality Control Problem with TPMs**
-

III DEALER SUPPORT SERVICES - CURRENT AND PROJECTED

- This chapter describes the results of INPUT's research into the views of leading dealers regarding the current range of services offered together with those envisaged to be important over the next five years.
- Reference to company size as large, medium, or small is defined by annual revenues in the following ranges:

<u>Size</u>	<u>Annual Revenue</u>
Small	\$2 million or less
Medium	\$2 million to \$5 million
Large	\$5 million or more

A. CURRENT RANGE OF SERVICES OFFERED

- The sample of 48 dealers was asked to list those activities and services offered by their business in order of importance, measured by the number of mentions, these were:

<u>Service</u>	<u>Number</u>
Hardware maintenance	35
Software support	33
Training	32
Consultancy	29
Communications/networks	20

- A full list of services currently offered by the dealers interviewed by INPUT is shown in Exhibit III-I.
- The range of services offered by dealers in the U.K. is far more extensive than what is generally available in either France or Germany, especially in the communications/networking and disaster recovery areas. Of the 20 dealers that mentioned they offered support on communications and networking, 15 were U.K. dealers, 3 French, and 2 West German.

B. RANGE OF SERVICES TO BE OFFERED IN THE NEXT ONE TO FIVE YEARS

- When asked about future services to be offered, it was apparent that the small/medium-size dealers had not given any serious thought to increasing or decreasing the range of services they offered.
- Eight large dealers said that they considered their range of services would stay the same. These dealers, however, are already providing the majority of services listed in Exhibit III-I.
- One large dealer said that his range would increase with more networking support services.

EXHIBIT III-1

SERVICES CURRENTLY OFFERED

- **Hardware Maintenance and Support**
- **Software Maintenance and Support**
- **Training/Training Courses**
- **Consultancy**
- **Communciations and Networking**
- **Configuration Planning**
- **Installation Planning and Implementation**
- **Disaster Recovery Services**
- **Media Conversion**
- **Wiring/Cabling Work for Network/Communications Installations**
- **Site Surveys for Communications Installations**
- **Preventive Hardware Maintenance**
- **Residential or On-site Engineers**
- **File Security/Safe Deposit**
- **Collection and Delivery Service**

- One or two large dealers have decided to pull out of hardware maintenance altogether and are attempting to sell off their customer bases to third-party maintenance organisations.
- As a commentary on the interviews conducted, the small/medium-size dealers tend to be market driven, often providing services at the specific request of one key customer and then offering it to other customers.
- Amongst small/medium-size dealers/VARs, the trend is to offer software support but not hardware maintenance. The cost, mentioned by three of the smaller dealers, of creating hardware maintenance departments is considered to be prohibitive, whereas the majority of dealers/VARs have software personnel on staff and software support is relatively easy to deliver without excessive investment in parts, equipment, or space.
- Almost all the small/medium-size dealers not offering their own hardware maintenance offered their customers third-party maintenance for which the dealer can receive a commission of up to 20% on the first year's premiums and 10-15% on subsequent years.
- Of the dealers interviewed, the numbers providing customised software services were as follows:
 - United Kingdom - 11.
 - France - 5.
 - West Germany - 6.
- Customisation of software, whether a completely customised system or modified, needs ongoing development and support and, as a result, the dealers providing customised software have set up a telephone support service.

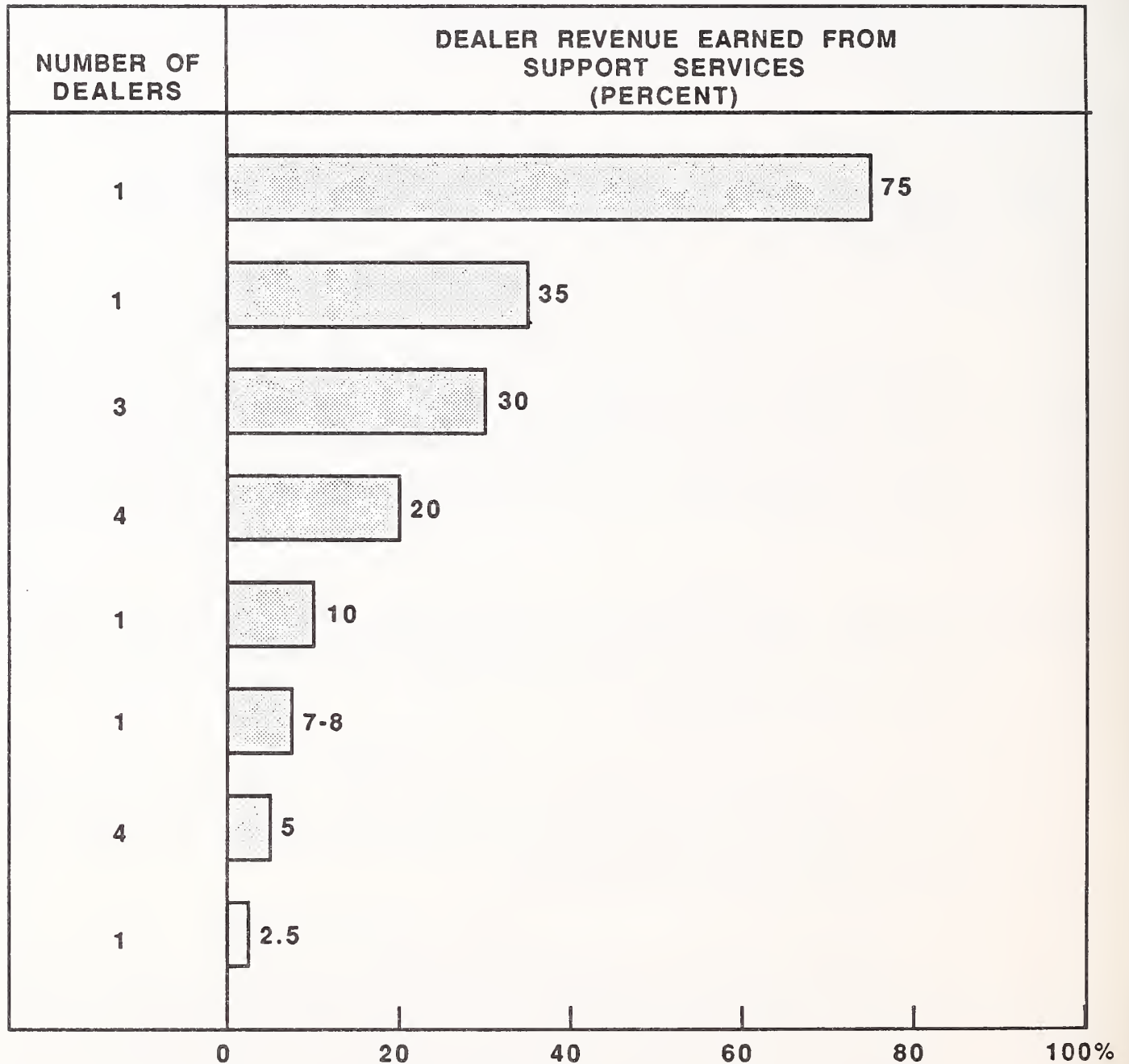
- Other dealers do provide or offer a remote diagnostic facility as well as telephone or site support, but some customers will not allow outside access to their databases.
- A strong trend amongst dealers has been to support packaged software; three of the dealers interviewed felt they could offer a better service to their customers than the original software publisher's hotline service and, overall, some 70% of those surveyed do provide software support.

C. CURRENT AND PROJECTED REVENUE/PROFIT FROM SUPPORT SERVICES

- The revenue currently obtained from support services varies greatly from one dealer to the next and ranges from under 5% to 75% with a considerable portion of 'don't knows', as shown in Exhibit III-2. This exhibit gives percentages of revenue for support services from those dealers who were able to provide a figure.
- The dealer quoting 75% of his revenue as being derived from support services was mainly on hardware maintenance of his own customers and as a third-party maintenance vendor.
- Profit margins were harder to define, but those dealers able to estimate profits earned from support services separately gave figures from below 5% to around 40% of total company profit.
- The majority of dealers interviewed were unable to project the likely percentage of revenue to be derived over the next five years from support activities; this must have implications on business directions, overall profitability, the actual level and type of support offered and given, and on the impact of any manufacturers' products in the marketplace.

EXHIBIT III-2

DEALER REVENUE OBTAINED FROM SUPPORT SERVICES



Responses were 16 out of sample of 48
Weight average revenue = 20%

16

- Only the larger dealers, sophisticated enough to have formal business planning, were able to estimate the profits expected from support services in the future, and it is believed that these are the businesses most likely to survive in what will become a very quality-conscious and competitive market. In this context, the larger manufacturers would be able to determine a more stable maintenance contract strategy together with these dealers to the benefit of both.
- However, in the short term, the current situation is likely to lead to opportunistic dealers and TPMs providing a second class service which may reflect back onto the original manufacturer's image.
- Some comments from dealers interviewed in support of development of increased revenue from support services are shown in Exhibit III-3.
- Although the comments in Exhibit III-3 point to no increased revenue/profit from the provision of support services, it is still widely accepted that the revenue gained is substantial and will continue to be so.
- The U.K. seems to be well in advance of its counterparts in France and Germany with regard to support services, i.e., the various types of service and revenue earned from them.
- Five of the French dealers interviewed foresee more revenue coming from training and consultancy than the more generally accepted support services. One large dealer quoted a figure of 50-60% of his revenue coming from those two services.
- Support services are not yet a big revenue earner in Germany.
- Training and consultancy as yet play a small part in the U.K., but the revenue/profit attainable is minimal when compared to hardware and software support services.

DEALER COMMENTS IN SUPPORT OF SERVICE REVENUE

'Hardware maintenance is 50% more profitable than software maintenance'.

'We see an increase in revenue from 30% to 35%, but the profit should increase from 50% to 754%'.

'We are putting a lot more effort into selling hardware and software maintenance'.

'Servicing is getting less involved, with module swapping, but not for less money'.

'Running costs of maintenance departments should get cheaper, and therefore more profitable'.

'Have gone up-market with hardware so no change in revenue splits, but the ratio of maintenance to cost of hardware will get greater'.

'Software support creates ongoing stability'.

'Service up until now hasn't been too important to the company but is quietly becoming established'.

'Training is starting to make a significant contribution to revenue'.

'Support could become an important source of revenue'.

'Maintenance is a growth area 'more interesting' than sales'.

- One IBM/Victor dealer with a relatively small turnover (under (\$1 million) was able to give a fairly precise picture of the current revenue and profit as follows:

	1986/1987		1987/1988		Five Years' Time	
	<u>Revenue</u>	<u>Profit</u>	<u>Revenue</u>	<u>Profit</u>	<u>Revenue</u>	<u>Profit</u>
Hardware Sales	35%	20%	30%	15%	30%	5-10%
Software Sales	35%	30%	35%	30%	35%	20%
Services	30%	50%	35%	55%	35%	70-75%

- The same dealer also said that 'hardware maintenance is 50% more profitable than software maintenance'.
- Eight dealers interviewed stated that they thought there would be no large increase in revenue or profit from support services. Comments from these dealers are shown in Exhibit III-4.
- It was a view that, although the hardware product cost may fall, the cost of maintenance will most likely stabilize and represent a larger ratio against the hardware cost.
- Another idea is that, on very low-cost PCs with one-year warranties, there will be a movement to have no maintenance contract and to treat it as an expendable tool.
- Alternatively, these units may be treated in the same way as TVs, etc., and customers offered single premium maintenance for product life, the service being taken up by TPMs.

EXHIBIT III-4

DEALER COMMENTS AGAINST LARGE INCREASE IN
REVENUE FROM SERVICES

'Maintenance charges will have to drop to coincide with cheaper equipment'.

'Services will only increase relative to sales'.

'Maintenance prices will come down relative to costs of hardware'.

'Equipment is becoming more reliable and therefore less essential to have a maintenance contract'.

'I quite often advise customers NOT to take out maintenance and only pay as required'.

D. RANGE OF SERVICES ACCORDING TO DEALER SIZE

- A random sample of 207 U.K. dealers was analysed by INPUT with regard to their sizes, by turnover and type of computer sold, either minis or micros, or both.
- Exhibits III-5 through III-9 show clearly that the larger the dealer, the more likely he is to provide hardware maintenance services.
- In the highest turnover bracket, more of the dealers/VARs are selling minis or a combination of mini and micro products than micros only, as shown in Exhibit III-8.
- Within the group selling minis or mini and micro combinations, seven out of nine of the largest companies supply hardware maintenance, as shown in Exhibit III-9.
 - Only 35% of smaller minicomputer dealers (with turnover below \$1.5 million) offered maintenance to their customers.
 - Nearly 78% of the larger group (with turnover in excess of \$4 million) provided a maintenance option.
- INPUT research suggests that the bigger the dealer, the more likely he is to offer maintenance. Alternatively:
 - Dealers grow larger because they offer their customers maintenance and other post-sale services.
 - Customers for complex equipment go to the larger dealers and demand maintenance as part of the package.

EXHIBIT III-5

ANALYSIS OF DEALERS OFFERING HARDWARE MAINTENANCE*

REVENUE RANGE (\$ Millions)	DEALER SAMPLE	DEALERS OFFERING HARDWARE MAINTENANCE	
		NUMBER	PERCENT
Less than 1M	150	25	17
1M - 1.5M	22	10	45
1.5M - 4M	20	13	65
Greater than 4M	15	13	87
Total	207	61	29

*U.K. Dealer Sample

EXHIBIT III-6

ANALYSIS OF DEALERS OFFERING SOFTWARE SUPPORT*

REVENUE RANGE (\$ Millions)	DEALER SAMPLE	DEALERS OFFERING SOFTWARE SUPPORT	
		NUMBER	PERCENT
Less than 1M	150	98	65
1M - 1.5M	22	19	86
1.5M - 4M	20	17	85
Greater than 4M	15	12	80
Total	207	146	71

*U.K. Dealer Sample

EXHIBIT III-7**ANALYSIS OF DEALERS OFFERING SOFTWARE TRAINING***

REVENUE RANGE (\$ Millions)	DEALER SAMPLE	DEALERS OFFERING TRAINING	
		NUMBER	PERCENT
Less than 1M	150	107	71
1M - 1.5M	22	20	91
1.5M - 4M	20	18	90
Greater than 4M	15	14	93
Total	207	159	77

*U.K. Dealer Sample

EXHIBIT III-8

**ANALYSIS OF DEALERS BY REVENUE AND
TYPE OF EQUIPMENT SOLD**

CLASSIFICATION BY REVENUE	U.K. DEALER SAMPLE
Dealers with Revenue Less Than \$1.5M	172
Dealers with Revenue More Than \$1.5M	35
Total Dealer Sample	207

ANALYSIS OF LARGER DEALERS BY EQUIPMENT SOLD	DEALER SAMPLE
Selling Microcomputers Only	20
Selling Minis and Micros	15
Total Dealer Sample	35

ANALYSIS OF LARGER DEALERS BY REVENUE	DEALER SAMPLE
Revenue between \$1.5M and \$4.0M	20
Revenue in Excess of \$4.0M	15
Total Dealer Sample	35

ANALYSIS OF LARGER DEALERS BY REVENUE AND EQUIPMENT SOLD			
	REVENUE \$1.5M - \$4.0M	REVENUE More Than \$4.0M	TOTALS
Selling Only Micros	14	6	20
Selling Minis/Micros	6	9	15
Total	20	15	35
Percent Selling Minis/Micros	30	60	43

EXHIBIT III-9

CLASSIFICATION OF MINICOMPUTER DEALERS OFFERING
HARDWARE MAINTENANCE, REVENUE

REVENUE CLASSIFICATION	NUMBER	OFFERING MAINTENANCE	PERCENT
Less than \$1.5M	43	15	35
Between \$1.5M and \$4.0M	6	3	50
Over \$4.0M	9	7	78
Subtotal: Dealers Selling Minis	58	25	43

Sample size: 207 (U.K. only)

IV IMPLEMENTATION OF SUPPORT SERVICES

- As part of this survey, INPUT asked all respondents:
 - How they implemented their support services.
 - What type of warranty was offered.
 - What they felt the customer attitude was towards maintenance contracts.
 - What they felt about third-party maintenance.
- This section defines standard support procedures and optional features and seeks to assess, from a dealer viewpoint, the customer stance on maintenance charges. Dealer concerns about third-party maintenance vendors as a potential threat to their revenue and business are also examined.

A. METHODS OF IMPLEMENTING HARDWARE MAINTENANCE

- Exhibit IV-1 shows the standard requirements from dealers/VARs offering hardware maintenance.

EXHIBIT IV-1

**STANDARD REQUIREMENTS OF
HARDWARE MAINTENANCE CONTRACT**

- **On-site Visits by Engineers**
- **Service/Repairs Department**
- **Hotline Telephone Support**
- **Component Swapping/Stocks Holding**
- **Variable Contractual Response Times**

- All respondents that were offering hardware maintenance to their customers offered these options as standard.
- The customer has several options on how and from whom they can get hardware maintenance, as listed in Exhibit IV-2 and IV-3.
- It is important to note that on some equipment, e.g., Hewlett Packard, the customer has no option but to take out maintenance cover with the manufacturer. This is covered further in Chapter V of this report where INPUT gives information on specific vendor equipment.
- However, with many sites now being a mixture of products there is likely to be a trend away from supplier-dedicated maintenance.
- Three dealers/VARs that responded to this INPUT survey were using and offering remote diagnostics as a facility of their hardware contracts. One of these dealers was based in West Germany and two were in the U.K.
- Dealers cited the massive expense of remote diagnostics equipment as a reason for not offering this option; however, other dealers do.
- Only the very large companies maintaining very large systems (e.g., DEC, Unisys, Data General) can afford the expensive equipment needed to be able to offer this service. This situation is 'unlikely to change in the foreseeable future' was one large dealer's response.
- All the dealers responding to this survey that offer hardware maintenance will 'swap-out' components to get a customer up and running. On the lower level equipment (PCs), more and more complete module swapping is happening.
- This form of maintenance could bring down costs to the dealer considerably--inexpensive staff can be used to make the site visit and swap the broken module, where relatively little skill is required, and expensive technically

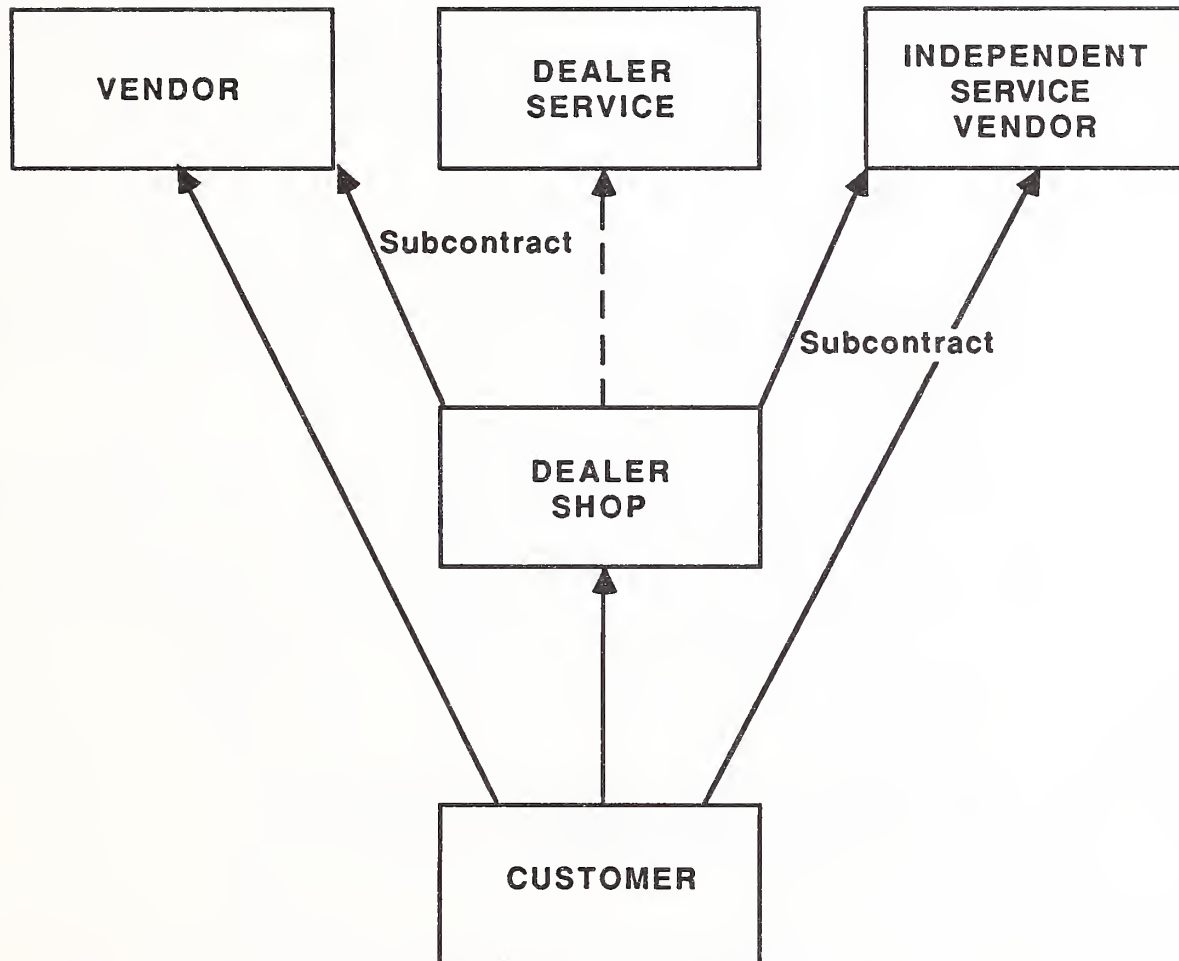
EXHIBIT IV-2

HARDWARE MAINTENANCE OPTIONS FOR END USERS

- **From the Dealer That Supplies the Specific Hardware**
- **From the Manufacturer - On-Site Maintenance**
- **From the Manufacturer - Return to Depot**
- **From the Manufacturer - Return to Dealer/Referral Service**
- **Third-Party Maintenance (TPM) - Purely Maintenance Vendors**
- **Third-Party Maintenance (TPM) - Maintenance and Dealership**

EXHIBIT IV-3

CUSTOMER SERVICE CHANNELS



skilled engineers can spend most of their time productively repairing equipment at the depot.

- Four dealers stated that module swapping was standard practice. In these cases, the modules are shipped back to the manufacturer under warranty agreements or repaired by the dealer in-house and then returned to the customer.
- However, this method can give extreme customer distress where the equipment is left unmended, and it is almost obligatory for the dealer to hold a 'repair and return' or new stock of 'swappable' modules.
- Charges for hardware maintenance still appear to be around 11-12% of the hardware value, although this will gradually change as the price of hardware falls and an optimum level of maintenance cost is eroded where it is possible to remain in profit.
- Where equipment is known to be troublesome (e.g., mechanical printers), the percentage charged for maintenance can rise to 17%, and on infamous unreliable equipment (e.g., some tapestreamers and archive back-up units) the percentage can go as high as 22%.

B. RESPONSE TIMES - STANDARD AND EXCEPTIONAL

- Standard response times contracted to hardware maintenance calls can be 2, 4, 8, 24, or 48 hours, depending on customer requirements.
- Of the dealers in the U.K. questioned by INPUT on response times to maintenance calls, six of the sample of 26 offered their customers variable response times ranging from 2 to 24 hours, as against the balance of 20 who stipulated fixed (maximum) response times (see Exhibit IV-4).

EXHIBIT IV-4

U.K. DEALER RESPONSE TIMES TO MAINTENANCE CALLS

RESPONSE TIME (Hours)	NUMBER OF DEALERS
2	2
4	8
6	2
8	9
24	4
48	1

Sample 23; Multiple Responses

- The two most popular/acceptable response times are four and eight hours.
- Six- and eight-hour responses usually mean the 'next day'.
- If maintenance is offered with two- or four-hour response times, the dealer must either have national coverage or sell into a tight geographical area in order to be able to supply the service economically.
- According to the dealers involved in this INPUT survey, no particular market sector required a different type of service contract to any other sector. It is totally dependent on the software applications involved and whether a company can exist effectively for any length of time without their computer system.
- Customers, whether large, medium, or small, will require fast maintenance if their installation involves payroll or vertical applications for the effective running of their business; this applies to all levels of equipment whether a PC or a mainframe.
- For example, fast maintenance is required for tour operators, airlines, banks, stockbrokers, and for companies that have invoicing linked to stock control and goods dispatch, which start to lose business if their customers cannot be served for even short periods of time.
- Conversely, the loss of spreadsheet users, small applications, and word processing does not jeopardise a company's business.
- Within some very large organisations where several hundred machines are maintained, 'resident engineers' are an option for the customer. Two of the dealers surveyed gave details of this option where the engineer is permanently based on the customer premises. To do this effectively, the engineer must be capable of maintaining all the equipment on the site, i.e., multiple manufac-

turers' products from mainframes to PCs and peripherals. One of the dealers quoted a price of 20,000 pounds sterling per annum to provide this service.

- In exceptional circumstances, customers may request and get one-hour service, overnight cover, weekend cover, and, in one instance, cover for installations abroad where a 48-hour response time is found acceptable. This service was offered by a large DEC VAR which has customers in Italy and the Arabian Gulf.
- In West Germany, the normal practice is to return equipment to the dealer; Apple, IBM, Victor, and Unisys all offer this facility to their customers.
- Amongst the 13 West German dealers interviewed, two IBM dealers were found to be offering on-site maintenance.
- In France, response times varied from two hours to eight days and three dealers were offering more than one option. The majority (seven dealers) offered 24-hour response time (see Exhibit IV-5).
- As Exhibit IV-5 shows, seven dealers are offering their customers three- to eight-day response times; these times would be totally unacceptable to the U.K. customer.
- The French dealers surveyed did not apportion any large percentage of revenue to hardware maintenance, and it is believed the French customer would rather pay as and when a fault occurs. This would probably account for the acceptability of the long response times.

EXHIBIT IV-5

FRENCH DEALER RESPONSE TIMES TO MAINTENANCE CALLS

RESPONSE TIME	NUMBER OF DEALERS
2 Hours	1
8 Hours	1
24 Hours	7
48 Hours	2
72 Hours	1
5 Days	1
7 Days	2
8 Days	1

Sample 13; Multiple Responses

C. SPARES AVAILABILITY AND STOCKHOLDINGS BY DEALERS

- All the dealers/VARs offering maintenance surveyed carry spares in one form or another.
- Three IBM dealers questioned verified that IBM insists on spares kits being carried by the dealer for all models within their range.
- Four dealers mentioned the need to carry 'buffer' stocks on equipment with lengthy lead times, e.g., Japanese and Far East equipment.
- Three dealers selling IBM, Apple, and Victor supply spares by stocking and stripping complete systems. This can have the advantage of lower inventory costs as long as the rate of use of all the components is roughly equal.
- A Cado dealer reported that Cado does not insist on any levels of spares stockholdings and that they tended to buy 80% of their spares from external distributors.
- The main problem highlighted by five respondents to our survey was getting spare parts for obsolete equipment; Apricot, IBM, Compaq, and DEC were all mentioned in this respect. The dealers concerned in some cases have to resort to buying in secondhand complete to strip for spares.
- Difficulty in obtaining spares seems not to be a great problem to dealers, although their customers may not totally agree with this. Overall, two respondents mentioned difficulties in obtaining small parts and parts for peripherals. One French dealer questioned felt that heads of hard disks were 'virtually unobtainable', and one U.K. dealer mentioned a problem obtaining a spare Winchester drive.

- None of the dealers in the U.K. mentioned any problem in delays on parts, although four mentioned the need to carry 'buffer' stocks because of bad lead times. However, if lead times are stated by the manufacturer, the dealer can order and control stocks accordingly.
- In France and Germany the dealers surveyed did have one or two complaints about delays. IBM, Apple, and Novelle were all mentioned, but it must also be said that three other dealers spoken to felt that IBM and Apple were offering very good service.
- Two dealers, one in France and one in Germany, both mentioned occasional 'communication problems' with suppliers, namely IBM and Apple, and blamed distance as a possible cause for the communications problems.
- One dealer in France selling Apple, Amstrad and Thompson said that expensive test equipment needed is not readily available, although in the context of this survey it was not possible to further investigate this aspect.

D. DEALER SPARES AND AVAILABILITY BY VENDOR

- INPUT asked all dealers about the availability of spares and stockholdings as stipulated by their vendors. The following is a list of those manufacturers on which we were able to ascertain any information and what the respective dealers considered to be their normal practise.
 - IBM: IBM insisted its dealers hold one of everything plus several off smaller components, e.g., fuses, print leads. IBM supplies spares kits for each system. In general, lead times are good, and it is possible to collect 'over-the-counter' spares. In France and Germany, the response is also good, although occasional breaks in service are encountered.

- Olivetti: In general on the lower level, equipment spares are easily obtainable. All maintenance of the 3B range is passed back to Olivetti.
- Wang: The dealers are expected to carry extensive spares. Availability is good, usually with a 24-hour turnaround.
- Compaq: Dealers are expected to carry spares and complete systems for use as spares. Compaq gives a fast turnaround in spares in France, Germany, and the U.K.
- Apple: It is up to each individual Apple service centre to hold sufficient spares. Apple insists on one spares kit for each model within its range. Generally, there is a fast turnaround in spares. France experiences some delays during certain periods within the year and Germany has occasional delays, but in the main Apple has a good response time.
- Amstrad: Dealers find spares hard to get. There can be a three-month lead time, so they must carry extensive 'buffer stock'.
- Apricot: Dealers are finding it difficult to obtain spares.
- ICL: Dealers are encouraged to pass maintenance back to ICL; 50% of the customers take direct maintenance contracts.
- DEC: If it is an authorised DEC trader or distributor then usually there are no problems as the dealer is working in very close conjunction with DEC.
- Unisys: Dealers are encouraged to refer maintenance back to Unisys; 60% of customers take maintenance contracts direct, some of them incorporating OEMs and other makers' products.

E. IMPLEMENTATION OF SOFTWARE SUPPORT

- Roughly half of the 43 respondents to this survey in the U.K., France, and Germany are supplying customised software:
 - U.K. - 11 dealers/VARs - custom software.
 - France - 5 dealers/VARs - custom software.
 - Germany - 6 dealers/VARs - custom software.
- The U.K. dealers appear to be doing more custom software, with five of these questioned mentioning that the custom software/packaged software split was 50/50. Two dealers/VARs gave a figure of 99% for custom software; both of these dealers/VARs were DEC vendors. In France, the split was smaller--two dealers gave 20%, two gave 10%, and one gave 5% as the percentage of software that was customised. In Germany, two quoted 5%, one 20%, and another 40%.
- Dealers providing custom software do support it. All the dealers providing custom software that INPUT questioned also offer a telephone hotline service. If problems occur that cannot be rectified over the telephone, then on-site visits can be arranged and, dependent on how the fault was caused, charges can be made.
- Updates to software can also be covered by maintenance contracts, and it is becoming increasingly popular among dealers to offer support on packaged software. The popular packages, e.g., Pegasus, Lotus, dBASE, all offer the end user a hotline support service direct to the publisher, but it is generally found that this support is poor. The dealer is more apt to care about the customer's problems as the customer base can lead to extensive repeat and referral business.

- End users are more agreeable to paying software maintenance charges as the cost per year is not exorbitant in comparison to hardware maintenance, as a software support unit can be relatively inexpensive to set up.
- Several non-dealers are now appearing in the computer marketplace, offering software support on packaged software; this could take revenue away from the dealer although probably not from those who supply customised software.
- In France, software maintenance is not a big source of revenue. 'Software hardly ever goes wrong', quoted one French dealer. The French are heavily committed to training services, as offering and giving more training to the end user can cut down the need for so much software support.

F. TRAINING

- Thirty-two out of the 48 respondents to this INPUT survey reported that they offered training facilities to the customers:
 - U.K. - 11.
 - France - 10.
 - West Germany - 11.
- The highest percentage was in West Germany and then France, where almost all of the dealers interviewed provided training.
- The number of dealers that INPUT spoke to within the sample that held organised scheduled training courses were:

- U.K. - 7.
 - France - 7.
 - West Germany - 7.
- Again, the higher percentage pro rata came from France and West Germany where the following statement were made by various dealers/VARs handling IBM, Apple, Amstrad, Olivetti, and Compaq systems:
 - 'Training will be least double over the next five years'.
 - 'Training, very successful, very profitable'.
 - 'Becoming an important source of revenue'.
 - 'Becoming more and more necessary - a growth area'.
 - Three respondents in France mentioned the use of external training courses on which they will book places for customers.
 - The larger dealers in the U.K., as broken down by revenue size in Exhibit III-6, are the ones offering training courses. Seven of the 11 dealers/VARs that offered training held formal courses. These seven dealers all fall into the large dealer category. The remaining four dealers offered training on-site to customers as and when required.
 - The two ways in which training can be given to the customer are:
 - As and when required.
 - As a schedule of courses.

- This can be further broken down to:
 - On the customer premises.
 - On the dealer premises.
 - On external training centre premises.
- An average daily rate of \$200-250 per man-day is charged for training. On-site customer training can be considerably more than this average figure. One company specialising in packaged software quoted a figure of \$800 per day for on-site training.
- There is considerable variation in such charges not directly related to dealer size, and it is possible to have on-site group rates which are significantly less than the above figures.
- Course attendance is stated as varying considerably between two and ten people. The most commonly mentioned number being five or six attendees.
- An average of five attendees per course is reckoned to give a sizable daily income from this area of support.

G. DEALERS OFFERING CONSULTANCY SERVICES

- Whilst many dealers offer a consultancy service to their clients, it usually takes the form of assisting clients in choosing the correct hardware and software to meet their requirements. The customer is obviously steered toward the dealer's own solutions.

- In the survey carried out by INPUT, the number of dealers found to be offering consultancy was as follows:
 - U.K. - 6.
 - France - 5.
 - West Germany - 12.
- In West Germany, consultancy appears to be a major service offered; four of the 12 West German dealers/VARs offering consultancy said that it was a very important part of the service.
- One U.K. dealer's comment was that 'consultancy will increase with the move to UNIX systems', i.e., customers for multi-user systems will require more advice and consultation as they are a relatively new concept. Major consultancy opportunities generally arise at the inception of new technology.
- In this context, the requirement for multi-user networking expertise will increase considerably, and as there is a shortage of experienced multi-user networking staff within the computer industry as a whole, this could lead to dealer consultancy in this field being a prime target for development.
- INPUT suggests that there is potential, with the coming of the multi-user/networking age, for growth in support services and consultancy, and this area should be carefully evaluated by dealers/VARs.
- On the single user level, a member of the dealer staff who is an expert on applications both horizontal and vertical, pertaining to that dealership, would clearly be an asset on consultancy services but, even here, the level of expertise required to give 'good' solutions may be hard or expensive to find or train, and needs forward planning of dealer markets and strategy vis-a-vis the manufacturer.

H. WARRANTY

- Most products carry a warranty from the manufacturer, e.g., IBM, Compaq, Apple, DEC, offering the customer a one-year warranty, whereas others offer shorter or longer periods sometimes dependent on the type of product and size of contract (sale).
- In the case of IBM, the dealer undertakes the repair of the equipment, and the parts are replaced free of charge by IBM plus an allowance for labour costs incurred.
- Where 'return to dealer' warranty is given by the manufacturer, the customer returns the equipment to the dealer, who then organises the repair. The costs of the repair, i.e., labour and parts, are not incurred by the customer. The dealer gets free replacement of parts repaired under warranty.
- One IBM dealer said that he did not pass on the warranty to his customers; instead, they are put on maintenance contracts from day one of the installation of equipment.
- Four of the U.K. dealers stipulated that although they pass the warranty on to the customer, they also instigate on-site maintenance contracts at a reduced rate as all parts are replaced free by the manufacturer; hence, while the equipment is under warranty, the financial liability to the dealer is decreased.
- Wang offers a 90-day warranty and, thereafter, the customer is strongly encouraged to take out full maintenance coverage.
- No warranty on equipment such as the Amstrad PC1512 hard disk systems means that the dealer can instigate a hardware maintenance contract from day one of the installation. Amstrad has made it very clear to their dealers that this is a procedure the dealers must instigate.

- Victor offers the end user a one-year free on-site warranty. This could be a trend for the PC market, although during the course of this survey INPUT found no evidence of any other manufacturer even hinting at this possibility.

V DEALER SUPPORT TRENDS

- Respondents were asked to comment on the perceived need for additional support services in the market and general trends and opportunities for dealers over the next five years.
- INPUT also asked respondents about their perceptions of customer attitudes towards maintenance contracts.

A. NEW SERVICE OPPORTUNITIES

- Respondents to INPUT's survey, when questioned on new service opportunities, gave few indications of any new activities that they anticipate moving into.
 - Three dealers commented on the opportunities arising from increased networking demands.
 - Two dealers gave their perceptions on the development of laser printers.
 - One dealer felt that laptop computers will offer interesting services possibilities.

- Four dealers in the U.K. mentioned insurance schemes for maintenance cover, but two of them also felt that it was not an idea that would escalate in the U.K.

I. NETWORKING

- As communications and networks become more widely accepted, more support will be required vis-a-vis:
 - Installation planning.
 - Site surveys.
 - Cabling.
 - Security.
 - Consultancy.
 - Higher level of support.
- One IBM dealer in the U.K. was of the opinion that 'in the largest to the smallest company networks will be widely used in the future'. His reasoning behind this was that general office and other automation is happening--gradually but positively.
- A 'feel' for this market development indicated several areas already under active consideration:
 - Distributed files.
 - PC porting to mainframes.

- Automatic data export to central files.
 - PC access to telex and electronic mail.
 - Information services on-line.
 - Home shopping and banking.
- A second dealer in the U.K. also commented on the gradual process of office automation but referred to it as automated office systems and felt that, with the same theory applied, networking will be more commonplace over the next five years.

2. LASER PRINTERS

- Three dealers participating in the survey pinpointed laser printers as a new opportunity for service and support.
- One of these dealers gave the view that a second generation of laser printers was imminent, which would give much faster throughput of documents at the speed of a photocopier and 'would eventually be maintained like photocopiers on a price-per-copy-type contract'.

3. LAPTOP COMPUTERS

- An IBM/Victor dealer gave positive indications of the way laptop computers may be used in the not too distant future--the potential to link laptop computers via cellular radio. The increase in sales initially will be motivated by those who want 'gadgets', but the market will mature into a practical market.
- The potential link between laptop portables with a built-in modem and in-car cellular radios for sales order entry by salesmen on the road, for example, may develop this kind of opportunity further.

4. INSURANCE

- The insurance scheme whereby the customer takes out a policy to cover maintenance would appear to have lost any impetus in the U.K., according to two dealers that INPUT questioned.
- The premiums are not exorbitant, but the customer does not have priority over those customers on maintenance contracts nor do these customers receive regular preventive maintenance.
- One French dealer said that his customers take out insurance for disaster recovery.
- The disaster recovery policy could have potential in the U.K. where disaster recovery is handled by the dealer and charged to the customer pro rata, which can be very expensive for the customer.

B. GENERAL SERVICE TRENDS

- INPUT asked all respondents for their opinions on general service trends within the computer market. The following list was compiled and, in all cases, more than one dealer highlighted that particular viewpoint:
 - Users will increasingly prefer one company to deal with all their problems. 'One-stop shopping' is more convenient, practical, and effective.
 - Dealers offering maintenance will be expected to maintain all equipment on the customer site--peripherals as well as systems, including systems bought from other suppliers.

- Some large corporate customers may buy extra systems as spares so that they can utilise the manufacturer's return to depot warranty. This, however, may only be good practise during the warranty period of any system; thereafter, the customer would probably have to pay time, materials, and delivery costs, which might not work out cheaper than maintenance contracts.
- Equipment is becoming more reliable and, overall, more easily and cheaply maintained, which may lead to lower long-term service prices for the customer and possibly, bigger profits for the maintenance centre.
- Training in France is a high revenue earner, as specified in Section IV.F of this report. Dealers in the U.K. should look to developing more training facilities. In France, the survey indicated that if the operator of the system is trained properly, the need for extensive software support diminishes.
- This raises the question, in the maximization of revenue and/or profit, of whether to concentrate on once-off training or to sell continuing software maintenance contracts.
- On the lower level PC equipment, INPUT found no real evidence of the manufacturers trying to take maintenance away from the dealer.
- The bigger the equipment, the more likely that the manufacturer will want to maintain it. IBM, DG, DEC, ICL, Wang, Hewlett-Packard, Olivetti, Unisys, and AT&T all compete with their dealers to obtain service business. Individual information on vendor support policy is given in Section VI-A.
- The dealer must offer a better service to compete. When asked if they felt they did/could provide a better service than the manufacturer, all those that offered maintenance said they they could for the following reasons:

- The dealer is closer to the customer, having sold him the equipment in the first instance and probably in the same geographical location.
- The dealer can offer a more personalised service, with the same engineer always attached to a particular customer, which helps maintain continuity.
- The dealer knows the customer installation hardware and software and will take more care of both, if only for the simple reason that a well-looked-after customer will bring referral business to the dealer and repeat business.
- The dealer can be more flexible to customer requirements and not adhere to rigid interpretation of contracts.

C. SOFTWARE SUPPORT OPPORTUNITIES/TRENDS

- The majority of dealers interviewed (15 in the U.K., 10 in France, and 8 in West Germany) are already offering software support to their customers.
- INPUT was unable to ascertain any percentage of revenue or profit for software support services, but in several instances the dealers made the comment that end users are becoming increasingly aware of the need for software support and are willing to pay for such a service.
- A software support unit is relatively cheaply set up. As the sample of 207 U.K. dealers shows in Exhibit III-6, 146 dealers in all revenue categories are offering software support, and 98 of these are in the small dealer category.

- The software support staff available within each dealership will vary. In the small dealerships, anyone involved in the software aspect of that dealership will be utilised for support as and when required, but care will need to be taken to recruit and/or train to an appropriate level of expertise.
- In large dealerships where the customer base is extensive, the need for full-time support staff leads to separate support units being set up with separate hotline phone numbers. The size of the customer base decides the number of support staff required; it is also dependent on how much software is supported and whether it is customised or packaged.
- The trend is to employ support people who are less expensive than trained programming personnel. Support personnel are operator-oriented and not necessarily experienced programming staff who know about applications software and systems operation. It also must be said that good software staff do not appreciate doing support work which can sometimes be mundane.
- Because of the difference in skill levels required, if training and telephone support are done by support staff and not by more expensive programming staff, this particular service area can be profitable.
- Several dealers initially started their companies within the computer industry solely on the strength of offering a particular client software support and, as a secondary issue, found themselves supplying hardware.
- It has been a long established view among dealers that support of software can give a company stability and profitability with the added value of a long-term customer base 'locked into' the dealer and his particular expertise.
- Expertise in a particular vertical market application also offers a more secure position in the dealer marketplace.

- With falling prices of hardware, dealers on all levels must look to support services for revenue/profit. If hardware maintenance is too expensive to instigate, then software maintenance should be the next course of action.
- With good software packages readily available off-the-shelf, the trend for more companies to establish themselves as purely software support companies will grow, markedly in the micro market where software prices also will continue to drop, thus allowing the customer to avail himself of more applications than has been accepted in the past.
- A more clearly defined split of dealers is emerging; selling strategies of up market (multi-user systems, larger systems, and more complex applications) as opposed to down market (PC clones and clone software) are becoming apparent. Dealers are actively choosing to go up or down market.
- All dealers are able to offer their customers a complete service including aftercare. Up market, large dealers are offering hardware and software maintenance and training bespoke software; down market, smaller dealers are offering software maintenance and training and some customisation of software and third-party maintenance for which commissions can usually be claimed and which can be a reasonable source of revenue and profit.
- The customer will consider the levels of support offered more and more important in their selection criteria for new and replacement systems/equipment.
- Exhibit V-1 gives some comments made by the dealers responding to the INPUT survey on their views about software support services. The comments accentuate the dealer opinion that the customer is looking very closely at the after-sales support they will receive before buying from any particular dealer.

EXHIBIT V-1

U.K. DEALER COMMENTS ON SOFTWARE SUPPORT SERVICES

'Good business, no effort required'.

'Custom software only needs supporting to get at 'teething bugs'.

'Ability and reputation to support is the philosophy of the whole business'.

'Key to success is support and looking after the customer base'.

'First-time users are not so inexperienced as they used to be, so the dealer must be better on support than the competition'.

'The customer will buy because he's getting FULL support'.

'We offer a better service because we are smaller and can care a little more - less red tape'.

'Software maintenance is almost entirely done over the phone'.

D. HOW DEALERS VIEW CUSTOMER ATTITUDES TOWARDS HARDWARE MAINTENANCE CONTRACTS

- INPUT asked all respondents how they viewed customers' attitudes towards maintenance contracts and the cost involved.
- Amongst the U.K. dealers that INPUT surveyed, the average number of customers taking out maintenance contracts with the dealers was 70%. With over one million installed PCs in the U.K., France, and Germany alone, this represents a sizable source of revenue to dealers, as shown in Exhibit V-2.
- In France, an average of 20% of customers are taking out maintenance contracts, and in Germany the figure is slightly less. The customer here prefers to pay as and when things go wrong on a time and materials basis.
- Four dealers in the U.K. out of the 23 surveyed expected the percentage of customers with service contracts to increase.
- Current attitudes towards the cost of hardware maintenance vary with the size of the installation and equipment involved.
- Dealers made the comment that as the price of hardware comes down the customer will find it increasingly difficult to accept the larger percentage that will ultimately have to be charged for maintenance, even though this larger percentage in real terms could mean less money.
- One dealer felt that 'smaller companies quibble more on costs on an individual basis'.
- It was strongly felt that the U.K. customer still sees the necessity for maintenance cover, as the following quotes imply.

EXHIBIT V-2

POTENTIAL REVENUE FROM PC MAINTENANCE
BY MAJOR MARKET

	UNITED KINGDOM	FRANCE	WEST GERMANY
1986 Shipments	400,000	350,000	380,000
Value of Shipments	\$1,000M	\$900M	\$950M
Average Percent by Value of Shipments on Maintenance	70	20	15
Maximum Attainable Revenue	\$100M	\$90M	\$95M
Current Maintenance Revenue	\$70M	\$18M	\$14M
Estimate of Current Dealer Revenue	\$36M	\$9M	\$6M

*All figures are rounded

Assumptions:

1. Shipments for 1986 are based upon INPUT estimates.
2. Value of shipments calculated by multiplying shipments by average end-user price.
3. Average end-user price is based on the one-off system price.
4. Percent of equipment on maintenance is based on results obtained from this dealer survey.
5. Attainable maintenance revenue is calculated at 10% of the shipped value.
6. Current dealer revenue is derived from the figures shown in Exhibit III-5.

- 'It's like not paying subscription to the Road Recovery Services, such as the Automobile Association, until your car breaks down'.
- 'More people are trying time and materials cover but will eventually come back to full cover'.
- In all cases where dealers that INPUT questioned offer contract and time and materials maintenance, they will always give priority to the customer who has a contract.
- Those customers on a time and materials-type maintenance are not able to stipulate response times and can have machines down for a considerable time.

E. WHY ONE DEALER SOLD OFF HIS MAINTENANCE ORGANISATION

- During the INPUT research for this report, we spoke to one large dealer who had recently sold off the maintenance organisation to a third-party maintenance vendor. INPUT asked for the reasons governing this decision, which was not made without a great deal of thought and research. The reasons given are as follows:
 - Spares and training of engineers costs are very high.
 - It was becoming increasingly expensive to run because of the quantity of new equipment coming on the market, involving more staff training and spares stockholding.
 - They were therefore limited on the number of different systems and printers they could support.

- They were coming up against more and more competition from third-party maintenance companies who could offer a total package.
 - They were coming up against more competition from manufacturers such as DEC and could not compete.
 - They were of the opinion that the customers are looking for one maintenance company to cover all equipment on-site and that this was a growing trend.
 - Maintenance costs on lower-end equipment, e.g., printers, barely cover labour, travel to sites, and component costs.
 - On low-cost units, it is very hard to offer realistic prices for maintenance.
 - Manufacturers will take back more maintenance.
- This list gives a fairly bleak picture of the hardware maintenance market from a company who decided to give it up. It is not intended to sway dealers away from developing a potentially profitable maintenance organisation but to highlight problems that any dealer must be aware of before embarking on such a project.
 - It may be noted, however, that if a TPM can operate profitably in the same field and the same geographical area, then there is no apparent reason why a dealer could not run a similar operation and, indeed, use it as an entry into new customer business.
 - The reason manufacturers do not want to do their own and multi-product maintenance, and therefore control the quality and credibility of the service, is that their effective control on the TPMs may be less than that over a TPM, and knowledge of customer reaction to any poor service becomes third hand--and late.

VI HOW THE DEALER VIEWS THE MANUFACTURER RELATIONSHIP

- This chapter concentrates on how the dealers view their relationships with the vendors/manufacturers. As the survey showed such diverse views and practises, it is necessary to break down the structure into information pertaining specifically to each vendor/manufacturer covered by this report.
- This chapter also deals with the dealer perceptions on third-party maintenance (TPM) companies and whether they see them as a threat to their own revenues for hardware maintenance or as an opportunity to keep the customer serviced while they get on with increasing market share.

A. SUPPORT POLICY

- On the lower level equipment (PCs), relationships between dealers and manufacturers are good, with dealers being given assistance to carry out hardware maintenance by the manufacturer, e.g., IBM, Apple.
- The further up market the equipment, the more likely it is that the manufacturer will actively try to take the maintenance contracts from the dealers, e.g., HP, DEC, ICL, Unisys.
- The up-market dealers, without exception, feel that they can offer their customers a better, more personalised service than the manufacturers. In

some instances, as with DEC, OEMs are openly condemning the manufacturers' stance in snatching maintenance away from the dealer.

- There are no standard procedures within the industry as yet for handling maintenance, so each vendor must be looked at separately.

I. DEC

- DEC openly competes with its dealers for maintenance contracts as it prefers to look after its own equipment. DEC will assist only a small handful of its appointed distributors/VARs.
- DEC offers the end user a 90-day on-site warranty and thereafter annual maintenance contracts. It was intimated by one or two of the dealers interviewed for this survey that they do not approve of OEMs handling maintenance.
- Where the dealer has an agreement with DEC and works in conjunction with them, there is a very strict process of continually assessing the OEM, both financially and on results. These dealers must carry extensive stocks of equipment. Lead times for spares are a minimum of three months and can be nine months to one year. These dealers also get extensive assistance from DEC even down to the provision of DEC engineers permanently based on the dealer's premises. One very large dealership was forced to set up a completely separate company to handle DEC equipment.
- DEC does not offer commission to OEMs who supply direct to customers and refer back maintenance. There are, however, several TPMs that will pay commission to OEMs, and these are being used more frequently and can be seen as competition to DEC's own maintenance business.
- DEC will also maintain OEM equipment which enables it to pick up larger contracts and optimize revenue.

- One DEC VAR that INPUT spoke to on this subject said that some DEC customers are unhappy with the DEC maintenance service. 'They have an attitude problem; response times are not adhered to and existing DEC customers are not looked after nor cared about as much as they should be'.
- Because of the above factors, DEC may ultimately lose a lot of its maintenance contracts to TPM companies. However, the equipment is selling very well in the U.K. even if DEC dealers/VARs have had their upsets, and the DEC name will carry the company through for a long time to come.

2. ICL

- ICL offer its dealers a partnership programme which includes:
 - Support hotline for systems and software support, telephone advice and guidance, and a single point of contact for dealers. The dealer is allowed to designate two nominees to make use of this service.
 - Trader Spares Service, giving spares express and repair express service when speed is essential, information on spares availability, catalogues of spares, and customer feedback.
 - Technical Support Plus, which involves the 'borrowing' of ICL staff by the dealer for assistance at workload 'peak' times or specialist assistance for key problem areas.
 - Commission scheme, where the commission is paid to the dealer for support contracts passed back to ICL, which can be taken in cash or used against orders. The level of commission increases with volume and sales into key areas.

- In West Germany, ICL has recently appointed a small number of Regional Traderpoints, eight with total solution capability in defined vertical markets that do not compete with ICI direct. The Traderpoints can, but need not, offer hardware maintenance which ICL is happy to provide, paying a commission to the dealer. All West German Traderpoint dealers offer software support.

3. IBM

- At the PC level, IBM is not interested in maintaining its equipment itself, but IBM does have very formal and stringent regulations as to who does maintain its equipment.
- Engineers must go on an IBM training course and, on graduation, are given a number which they must quote each time they telephone IBM before they can receive assistance. The number stays with the engineer, and, if he changes companies, he is still able to ring IBM and quote that number to receive assistance. If at any time the first company tries to use that number, they will be heavily penalised. Every company authorised to sell IBM equipment must have an IBM trained engineer on staff.
- IBM is one of the few manufacturers who actively assesses customer satisfaction. One of its large dealers told INPUT of the 'Customer Satisfaction Award' presented every year to the best dealers.
- IBM is very conscious of customer requirements and will check with customers on their level of satisfaction with a dealer and whether an authorised engineer has carried out maintenance. The dealers that INPUT spoke to in the course of this survey did not object to this 'spot checking'; if anything, they appeared to be in favour of it. It keeps standards up throughout the national market on IBM equipment and installations. If done in an overt way, it can and does instill confidence in IBM products and dealers in the customer, which is good for future sales.

- The IBM dealers at this level are in general very happy with the service they receive from IBM. Response times, technical advice, spares handling, and availability were all rated from good to excellent by INPUT respondents.

4. HEWLETT-PACKARD

- Whilst HP will allow dealers to maintain its printers and laser printers and give them every assistance, HP prefers to maintain its systems itself.
- HP wants a degree of 'invisibility' in the maintenance market to ensure their product maintains its reputation for 'not failing'.
- One of their dealers complained, 'It is very hard to get information from HP to enable us to maintain their equipment'.
- HP has an arrangement for its large dealers called the 'Volume Repair Service'. If the dealer puts enough equipment together for repair, HP will send an engineer to the dealer's premises to repair all the equipment at much reduced rates. The dealer providing the maintenance must then carry sufficient 'buffer' stocks.

5. UNISYS

- Unisys has a strong third-party network with over 150 dealers, including systems houses with UNIX solutions who provide maintenance, but no authorised dealers to sell maintenance.
- Unisys want to take the maintenance itself and therefore offer a commission to the dealer to pass it over; this policy is to ensure that Unisys preserve the required level of quality and customer satisfaction.

6. OLIVETTI

- The smaller PC range of Olivetti equipment is normally be maintained by the dealers with assistance from Olivetti.
- The AT&T 3B range of equipment as yet has a very small market share, and it is unviable for dealers to maintain it. For the same reason, in the short term third-party maintenance vendors are reluctant to handle the range. All 3B range products are maintained by Olivetti and AT&T.

7. WANG

- Wang offers its customers a 90-day on-site warranty. It competes with its own dealers for maintenance contracts which does not endear Wang to its dealers.

8. AMSTRAD

- Amstrad passes all maintenance to third-party maintenance vendor Dictaphone Co., Ltd. Dealers are, however, allowed to maintain Amstrad equipment, but lead times on spares can be up to three months as parts have to be imported, and most dealers also recommend that maintenance be referred to Dictaphone Co., Ltd.
- Amstrad dealers who are maintaining the PC range of equipment are at present not happy with the failure rate on the hard disk range, which has been quoted from various sources as being as high as 20%, making this a costly machine to support.

9. APPLE

- Apple does not maintain its equipment; it uses a referral system which diverts the customer back to the dealer.

- Apple has appointed one third-party maintenance company, Bell Technical Services, which operate nationally and in Europe. Apple will not supply any other third-party maintenance vendors with equipment or spares.
- Apple is very accessible to the dealers for spares and support. One dealer said that he could get spares 'over the counter' when necessary.
- The relationship between the dealer and Apple is apparently good, and the dealers are encouraged to pick up maintenance contracts.

10. APRICOT

- Apricot has just signed a deal with a major TPM in West Germany to handle maintenance there.
- It offers the dealers a commission to sign up for maintenance, then hands the contract to the TPM.

11. COMPAQ

- The Compaq dealers that responded to our survey all felt that they had a good relationship with Compaq. Compaq keeps in good contact with its dealers who handle maintenance and is happy for them to do so.

12. COMART

- Comart offers the customer a full 90-day replacement warranty on its Quad range followed by a one-year return to dealer warranty. Maintenance is handled for Comart by KSL which, like Comart, is part of the Kode Group of companies. KSL offers the dealer 20% commission on first-year premiums.

- Comart is quite happy for the dealer to maintain its equipment or pass the maintenance on to other TPM vendors.

13. ERICSSON

- Ericsson has a rigid policy that its dealers must handle maintenance, otherwise they are not appointed.

14. VICTOR

- Victor appoints dealers as fully authorised service centres and is reported as offering excellent support to its dealers.
- Victor offers one-year on-site maintenance to the customer which takes revenue away from the dealer, but as another of its dealers pointed out, 'they are a nice company to do business with'.

15. DATA GENERAL AND PHILIPS

- Both Data General and Philips have a fairly low-market coverage, and both prefer to maintain their own equipment.
- In West Germany, Data General has a policy of doing business with systems houses who offer vertical market expertise and can do maintenance.
- As a policy, Data General has not appointed any dealers for its PC products in West Germany.

16. GENERAL

- Lead times on spares from the Middle East or Japan can be around the three-month mark. The dealers that maintain this equipment, e.g., Epson, Opus, Amstrad, are forced to carry extensive 'buffer stocks', which can amount to a considerable capital outlay and necessitates good inventory management.

B. DEALER EXPECTATIONS FROM VENDORS/MANUFACTURERS

- As far as INPUT could ascertain, the level of expectations from the dealers with regard to their needs from the vendors is low.
- The dealers INPUT interviewed do not expect any free handouts from the manufacturers in the way of spares or equipment.
- In order of importance, the following list shows what the dealers do expect and require from the manufacturer on any level of equipment:
 - Good technical support.
 - Training facilities that are operational, sales-oriented, and technical.
 - Good documentation on all levels.
 - Efficient delivery service adhering to scheduled delivery dates.
 - Good stockholding of spares and repair equipment.
 - Advertising and POS materials.
 - Efficient order handling.
 - Realistic credit facilities.

C. THE EFFECT OF THIRD-PARTY MAINTENANCE ON DEALERS

- All the dealers that INPUT questioned are conscious of TPM companies but do not appear to be unduly concerned about their activities in the market.
- Three dealers commented on the observed influx of new TPM vendors, but none of these felt that it was a threat to their business. One of these dealers also made the comment that 'several maintenance companies are falling out of the market, unable to compete'.
- Exhibit VI-1 shows some comments made by the dealers interviewed when asked their opinions on TPM and whether they felt threatened by the increasing TPM presence.
- There is a very clear picture here that the TPM companies certainly have a place in the market. As far as the dealers we spoke to are concerned, their presence does not have an adverse affect on the dealers' revenue.
- As long as TPMs provide a good service to the customer, they can actually assist the smaller dealers by allowing them to give the customer more than one maintenance option.
- It is the view of INPUT that there is a certain amount of complacency amongst dealers about TPMs. In the long term, this complacency may be found to be ill-placed.

D. WHAT DO DEALERS THINK ABOUT COMPETITION FROM TPM

- Two respondents to the INPUT survey said that they used TPM to give their customers a choice. In both cases, the dealers were giving the customer a choice between the TPM or the manufacturer (DEC and Wang).

EXHIBIT VI-1

COMMENTS ON TPM FROM DEALERS

'Competition is not really a problem - don't get involved in price cutting'.

'Plenty of dealers at the lower level are passing work to TPM companies - not really a problem'.

'If an installation is outside the range of our geographical coverage we will pass the maintenance to TPM companies'.

'Not a problem from other maintenance companies; more of a problem from the vendor'. (A Victor Dealer)

'If you sell the hardware, the maintenance contract comes almost automatically'.

'Always been there, but not a problem'.

'We will act as TPM if required to do so, as we can maintain other than the systems we sell'.

'TPM has no effect because we offer the customer a complete package, installation and service of hardware and software. The customer will buy maintenance from us because we offer FULL support'.

'Maintenance companies who offer a cheap deal don't stay around; percentages of 6% quoted 2 years ago are totally unworkable now. It is impossible to maintain on these figures'.

'They are a good idea; there's no way I could handle maintenance'.

- The dealers providing a maintenance service all said that competition from TPM was not a big problem. In two instances, the dealer used TPM as a solution to cover customers outside his geographical territory.
- As shown in the INPUT sample of 207 U.K. dealers in Exhibit III-5, the vast majority (146 dealers) do not offer hardware maintenance. Many of these dealers do pass the maintenance to TPMs and get commissions from them. The commissions applied range between 15% and 20% of the first year's premium.
- The U.K. dealers within the survey that are offering hardware maintenance are putting an average of 70% of their customers onto maintenance contracts. None of these dealers forecast any decrease in their figures. Two forecast 85% and 90%, respectively, over the next year.
- Two dealers were of the opinion that it is not too difficult to 'lock the customer in' to services which are sold at the same time as the system.
- One dealer suggested that a dealer offering a good service rarely loses maintenance customers to TPMs; the user is unlikely to desert the original supplier unless they are very unhappy with the service received.
- The main competition to the dealer, as suggested by four of INPUT's U.K. respondents, will often come from the manufacturer, e.g., DEC, Wang, Victor, ICL. More information on how each vendor/manufacturer approaches maintenance can be found in Section VI.A.
- Victor, for example, who offers one-year free on-site maintenance to the customer will then attempt to pick up subsequent years' maintenance, thus taking revenue from the dealer. DEC and Wang actively compete with their own dealers/VARs for maintenance contracts.

- The various ways in which a customer can obtain maintenance and support are shown diagrammatically in Exhibit IV-3.

VII CONCLUSIONS

A. GENERAL

- Customer perception of what dealers should be supplying has changed as the control of computer equipment has started to drift away from the hands of dedicated DP personnel and departments and into direct end-user departments.
- So, whereas DP personnel were able to organise the delivery and maintenance of hardware and software from different sources, the new type of customer very definitely wants 'one-stop' shopping and support.
- In this context, dealers are deciding whether to:
 - Consolidate on sales, as the manufacturer is taking the maintenance or TPMs do it cheaper and better.
 - Set up customer hardware maintenance because this generates revenue and, hopefully, profit and also gives continued marketplace contact.
 - Set up or continue software maintenance because this needs little capital to generate reasonable profit, gives continued marketplace contact, and also gives opportunities for selling more and better products.

- The dealer not providing these services himself, or at least a referral service to the manufacturer or a reliable TPM, will however find it difficult, if not impossible, to sell to the emergent 'one-stop' discriminatory customer.
- Dealers will also need to be able to give professional training in whatever aspect of the market they sell into whether this be hardware operation or custom/packaged/networked software use.
- Otherwise, the customer will have doubts about the dealers' ability to support them once the system is live and this will feed through into an effect on manufacturers' credibility and sales. In most cases, initial support for this training will need to be provided from the manufacturer or publisher.
- A general feeling emerging from the marketplace is that manufacturers do not want to deal with the details of small projects and that dealers are not always able to deal with such details. This aspect will need addressing and will give market edge to the manufacturer/dealer pairs that formulate a joint strategy.
- Overall customers appear to be demanding, or at least seeking:
 - Technical capability.
 - Up-time availability.
 - Quick response.
 - Short downtime.
 - Free advice.
 - Low-cost consultancy.
 - Low-cost training.

- And dealers should be considering if and how to provide the above and also their own:
 - Quality control.
 - Level of expertise.
 - Customer satisfaction.
 - Medium and long-term plans.
- In this, dealers will need expert advice and some training from the manufacturer or software publisher.
- Whatever market area or position the dealer is currently in vis-a-vis the manufacturer and/or TPM, he will need to decide whether to consolidate or to extend his range of product or service:
 - Up market: large or multi-user network systems, with communications.
 - Mid-market: standalone large minis with peripherals.
 - Down market: personal computers and small networks.
- The effect of these individual decisions will impact the product image in the marketplace, and it may well be that each manufacturer should have a dealer advice function which, apart from giving advice, could collate information to formulate a dealer/market strategy.
- The indicators are that in the up-market and mid-market areas, dealers will be increasingly involved in:

- Hardware maintenance (about 30% currently offer this).
 - Software maintenance (about 70% currently offer this).
 - Training (about 80% currently offer software training).
 - Networking.
 - Installation configuration/design/planning.
 - Wiring and cabling and site surveys for communications systems.
- On the other hand, the volume PC dealer will increasingly be concentrating on selling, giving no backup, and referring contracts to manufacturers' warranties or to TPMs.
 - The trend will be towards treating these items as consumable semidurables in the same way as TVs and video recorders are considered and offering extended warranty by way of single premiums at point-of-sale, the service being taken up by a TPM.
 - In this context, if continued product credibility, or credibility for the next product, is wanted, the manufacturer will need to give training and support to the TPM.
 - However, with around four million installed PCs in Europe, the majority of which are utilising maintenance from one source or another, there is scope for the smaller dealer to consider hardware maintenance as an option, even if in a tight geographical area.
 - But again, to be credible, support will be necessary from the manufacturer or there will be a movement towards distributor networks of cheap substandard spares, which will harm the product image.

B. HARDWARE MAINTENANCE SERVICES

- On-site maintenance is still preferred by the end user as he prefers to see an engineer come to the premises, who he can 'lean' on to get a quick solution.
- Equipment is getting more reliable and, coupled with the increasing facility to module-swap, is becoming easier and therefore cheaper to maintain. Whilst costs for maintenance could fall slightly, the customer still widely accepts reasonable pricing for good support.
- Therefore, hardware maintenance, although costly to initiate, could and should be a high revenue earner, this revenue forming a large percentage of the total business revenue and generating profit in the range of 5% to 50%.
- Customers are much more aware of computers. Even first-time buyers are more knowledgeable than they were two years ago, and the dealer must offer good support or have an efficient referral system.
- High on the list of criteria for selection of system and dealer is the training and after-sales care that will be given.
- Dealers involving themselves in hardware maintenance should either:
 - Provide national coverage maintenance services which are expensive initially but potentially highly profitable.
 - Be prepared to maintain in a tight geographical area which will enable them to adhere to contractual response times more economically.
- Various options must be available to the end user, and flexibility (i.e., the option to change part or all of the contract mid-term) will be an advantage. These options are:

- Time and materials service.
 - Stipulated response times for stipulated costs.
 - Express response for critical sites/operations.
 - Overnight or weekend cover.
 - Resident engineers.
 - International cover.
- Some of these options are only viable if provided by the manufacturer or large TPM, and an evaluation of market/customer needs will be required to determine the cost benefit of specific strategies.
 - The large dealers already involved in hardware maintenance are aware of the potential for greater profits. They are getting disgruntled with some manufacturers who are competing with them for maintenance contracts or in some cases making it impossible for the dealer to maintain equipment by withholding technical information.
 - These dealers could move away from the manufacturers who are competing with them, which means that ultimately the manufacturers could:
 - Incur loss of business by losing the larger, more expert, outlets.
 - Incur extra costs in searches for new reliable dealers.
 - Incur extra costs in evaluating/monitoring quality/satisfaction levels.

- The majority of small dealers (see Exhibit III-5) prefer to 'off-load' the work on maintenance either back to the manufacturer or to TPM companies by reason of staff numbers, floor space, cost of spares holdings, etc.
- What will attract the dealer to any specific maintenance company is:
 - Whether the company can demonstrably maintain the equipment.
 - The commission that will be remitted back to the dealer.
- Manufacturers who are seeking to do their own maintenance must consider (again with reference to Exhibit III-5) whether it would be sensible to concentrate on the small dealer sector where, in general, the dealer would applaud the manufacturer taking a vigorous interest, as against moving up into the larger dealer area where there could be some resistance or aggravation.
- One of the factors in the equation will be maintenance revenue, but customer satisfaction and future sales revenue should also be featured.
- At the moment, only about 30% of dealers offer hardware maintenance, the majority of them in tight geographic areas. This figure should be considered against the 70% who provide software maintenance.
- However, there is a strong demand for hardware maintenance, and TPM companies will emerge whenever the manufacturer or dealer does not have a strong maintenance presence in any given area.
- If it is possible for TPMs to generate profitable revenue, then it should be easier for the dealer to capture this market at point-of-sale and make a similar profit. As can be seen from Exhibit III-2, this can amount to an additional 25% on top of current revenue.

- Both manufacturers and dealers will need to take into account the falling price of hardware and the lower margins obtainable on hardware sales and look for new profit opportunities.
- In the U.K., this is likely to be from hardware and software support, training, and networking consultancy. In France and Germany, the trend is more towards training and consultancy.

C. SOFTWARE SUPPORT SERVICES

- Any dealer, large or small, could increase his revenue by offering software support, both of customised and packaged software, because the customer in the U.K. is relatively happy about paying for software support.
- The cost involved in setting up a software support unit is minimal as long as the service is properly planned and resourced and adequate training is given to new and existing staff. However, the comparative profit, as against that for hardware maintenance, is reported as significantly worse and the relative margins will need to be taken into account.
- At the moment more dealers supply software support than hardware (70/30) and, therefore, the opportunities for manufacturers or software houses to move into the market are more restricted.
- However, to give a balanced maintenance service, at least in the medium and large installations, it would probably give more customer satisfaction, and revenue, to cover both the hardware and software aspects in one contract.
- Some options within software support activities are:
 - On-site support/training.
 - Telephone hotline (essential).

- File conversion.
 - Disaster recovery.
 - Punch and print (and mass update).
 - Updates to software custom package.
 - Training courses.
 - Consultancy.
- However, it is recommended that all support options are properly costed and priced before any service is contracted to a customer as the effect of later cost-cutting on maintenance performance must be considered. Low (marginal) costing is not viewed as a proper or lasting expedient to give customer satisfaction and, hence, future sales.
 - The more good services that can be provided to the customer, the better the chance of more market share and maintenance revenue growth.

D. TRAINING

- One unresearched anecdote in the industry is that there is more computer equipment in the marketplace being incorrectly used, or even not used at all, than vice versa; part of the reason for this perceived state of affairs lies with the lack of adequate or proper training.
- In order to extend the market, it is believed that the manufacturers and software houses must take prime responsibility for:

- Defining training needs.
 - Preparing user-friendly manuals and/or tapes.
 - Preparing manufacturer/dealer/TPM maintenance strategy.
 - Educating the dealer networks.
 - Ensuring adequate customer training is given (by site audits if necessary).
- The dealer or TPM will rely heavily on manufacturers and software houses and, where they are providing the service, should have detailed training themselves.
 - It should be considered obligatory for them to have Proficiency Certificates or written Accreditations from the manufacturer for the maintenance of specific product or software.
 - Pre-sale training can be offered as a service to naive (potential) users, perhaps as part of the consultancy or negotiation process. This will ensure both that the customer has a better idea of what he is being offered and getting and that he is better prepared on the receipt of the equipment. This aspect needs relatively little extra expertise in-house and would generate an 'easy' profit.
 - Post-sale training should be carefully prepared as a package and made obligatory prior to, or immediately after, the delivery of the equipment to customer and could be performed in-house or on-site as appropriate.
 - It should be remembered that as soon as the customer gets the equipment he will want to use it or will feel dissatisfied; hence properly timed training increases customer satisfaction and aids quick implementation. Again, little extra expertise is required, and it generates 'easy' profit.

- Training for customer staff (in bulk) should again be carefully prepared, preferably from handbooks, operators manuals, and training manuals supplied by the manufacturer or (software) publisher.
- To be done well, this aspect is more difficult and costly, but it provides dividends in less hotline and express maintenance calls as the part of any maintenance contract, and hence generates immediate profit from the training and better profit margin during succeeding contracts.
- Training in operating systems for larger systems is probably more economically left to the system supplier but the in-house 'expert' must also have the capability of performing such training in emergencies or even in answering 'hotline' calls.
- In this context, it must be emphasised that more and more customers are requiring 'one-stop' maintenance contracts.

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions. Continuing services are provided to users and vendors of computers, communications, and office products and services.

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